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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/713,255

11/17/2003

Takahiko Fujiwara

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EXAMINER

HANDAL, KAITY V

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/713,255	Applicant(s) FUJIWARA, TAKAHIKO	
	Examiner KAITY V. HANDAL	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3 and 4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3 and 4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn since new grounds of rejection were made.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanesaka et al. (US 5,804,148) in view of Nishizawa (US 5,108,716) in view of Yamamoto et al. (US 6,047,544).

With respect to claims 1 and 3-4, Kanesaka teaches an apparatus for purifying exhaust gases (fig. 1), comprising: an adsorption-purifying catalyst including: an HC adsorbent (3), and an oxidizing catalyst (4) (col. 3, lines 64-65); a three-way catalyst (5) disposed on an upstream side of the flow of exhaust gases with respect to the HC adsorption-purifying catalyst (3) (as illustrated).

Kanesaka fails to show wherein said oxidizing catalyst layer is on the HC adsorbent layer. Yamamoto teaches an exhaust gas purification catalyst comprised of an oxidizing catalyst layer (4) positioned on a hydrocarbon adsorption layer (3) formed on a monolith substrate (2) as illustrated in figure 2. It would have been

obvious to one having ordinary skill in the art at the time the invention was made to use Yamamoto's catalyst layered structure as an alternative to Kanesaka's catalyst separate-unit structure as such is known in the art.

Kanesaka fails to show wherein said three-way catalyst has a noble metal loaded higher on a high loading portion disposed on an upstream part of the three-way catalyst than on an ordinary portion of the three-way catalyst. Nishizawa teaches a metal carrier for a catalytic converter (fig. 1) wherein a three-way catalyst is comprised of a noble metal loaded higher on a high loading portion disposed on an upstream part of the three-way catalyst/metal than on an ordinary portion of the three-way catalyst in order to promote catalytic activation at low temperatures (abstract) and achieve a large cost reduction (col. 3, lines 2-12).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the three-way catalyst of Kanesaka comprise a noble metal loaded higher on a high loading portion disposed on an upstream part of the three-way catalyst than on an ordinary portion of the three-way catalyst, as taught by Nishizawa, in order to in order to promote catalytic activation at low temperatures and achieve a large cost reduction.

Kanesaka et al. in view of Nishizawa et al. discloses all of the claims limitations as set forth above, but the references do not explicitly disclose wherein a loading amount the high loading portion of the three-way catalyst/catalyst metal is twice or more of a loading amount of the ordinary portion of the three-way catalyst; and formed within a range of 1/2 of an overall length of the three-way catalyst ranging

from an upstream end of the three-way catalyst, and wherein HC adsorption-purifying catalyst includes the HC adsorbent and the oxidizing catalyst with a proportion of the HC adsorbent with respect to the oxidizing catalyst from 5 : 1 to 2 : 3 by volume. The specific loading amount of the high loading portion of the three-way catalyst, range of length of said metal catalyst, and proportion of the HC adsorbent with respect to the oxidizing catalyst, are not considered to confer patentability to the claims. As the reactor cost of construction and efficiency of operation are variable(s) that can be modified, among others, by adjusting said loading amount and range, with said construction cost and operating efficiency both increasing as the loading amount and range is increased, the precise loading amount and range would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed loading amount and range, and proportion of the HC adsorbent with respect to the oxidizing catalyst cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the specific loading amount of the high loading portion of the three-way catalyst, range of length of said metal catalyst, and proportion of the HC adsorbent with respect to the oxidizing catalyst to obtain the desired balance between the construction cost and the operation efficiency (*In re Boesch*, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior

art, discovering the optimum or workable ranges involves only routine skill in the art.
(*In re Aller*, 105 USPQ 223).

Response to Arguments

Drawings

Objection to the drawings is withdrawn due to applicant's convincing explanation that sufficient detail describing the orientation of the HC adsorbent on a substrate and an oxidizing catalyst layer on the HC adsorbent layer in sufficient detail.

Prior Art

4. Applicant's arguments filed 3/26/2008 have been fully considered but they are not persuasive.

Applicant argues that the references fail to teach or suggest that a loading amount of the high loading portion of the three-way catalyst/catalyst metal is twice or more of a loading amount of the ordinary portion of the three-way catalyst. Examiner respectfully agrees; however, as set forth in the rejection above, though Kanesaka fails to show wherein said three-way catalyst has a noble metal loaded higher on a high loading portion disposed on an upstream part of the three-way catalyst than on an ordinary portion of the three-way catalyst, Nishizawa teaches a metal carrier for a catalytic converter (fig. 1) wherein a three-way catalyst is comprised of a noble metal loaded higher on a high loading portion disposed on an upstream part of the three-way catalyst/metal than on an ordinary portion of the three-way catalyst in order to promote catalytic activation at low temperatures (abstract) and achieve a large cost reduction

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(col. 3, lines 2-12). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the three-way catalyst of Kanesaka comprise a noble metal loaded higher on a high loading portion disposed on an upstream part of the three-way catalyst than on an ordinary portion of the three-way catalyst, as taught by Nishizawa, in order to in order to promote catalytic activation at low temperatures and achieve a large cost reduction.

Furthermore, Applicant's remarks on Page 7 stating that one of ordinary skill in the art would not have expected the multiplier effect that the amount of noble metal loading has on the amount of HC in an outlet gas of HC adsorption-purifying catalyst are not convincing because one skilled in the art, as taught by Nishizawa, would provide a three-way catalyst comprised of a noble metal loaded higher on a high loading portion disposed on an upstream part of the three-way catalyst/metal than on an ordinary portion of the three-way catalyst order to promote catalytic activation at low temperatures (abstract) and achieve a large cost reduction (col. 3, lines 2-12), and thereby, would intuitively achieve lower HC emission. Moreover, the specific loading amount of the high loading portion of the three-way catalyst (twice or more) is not considered to confer patentability to the claims. As the reactor cost of construction and efficiency of operation are variable(s) that can be modified, among others, by adjusting said loading amount, with said construction cost and operating efficiency both increasing as the loading amount and range is increased, the precise loading amount would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected

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results, the claimed loading amount cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the specific loading amount of the high loading portion of the three-way catalyst, to obtain the desired balance between the construction cost and the operation efficiency (*In re Boesch*, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller*, 105 USPQ 223).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaity Handal whose telephone number is (571) 272-8520. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KH

4/9/2008

/Alexa D. Neckel/

Supervisory Patent Examiner, Art Unit 1795